

Application Serial No. 10/820,555
Reply to Office Action of July 27, 2007

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Docket: CU-4420

REMARKS

The applicant's previously made election to prosecute claims 1-8 and 10-28, was acknowledged by the Examiner in the office action mailed July 27, 2007. The applicant therefore requests that claims 29-31 be cancelled so that they can be presented in a divisional application at a later date.

Pending claim rejections made under 35 U.S.C. §101

In the office action that was mailed July 27, 2007, the Examiner rejected independent claims 1, 11, 18 and 25-28 under 35 U.S.C. §101 because those claims allegedly lacked utility. The Examiner stated that those claims did not state that the "software" recited in them was "executable." The claims were also rejected because they recited a "database" without disclosing memory by which the Examiner presumably means that the claims must recite that the database is stored in some sort of memory device.

In response to the claim rejections that were made under 35 U.S.C. §101, claims 1, 11, 18 and 25-28 have been amended to recite that computer program instructions are executed by which a simulation is presented on a display device. The claims have also been amended to recite that the databases are stored in memory devices.

No new matter has been added by the amendments that have been made to overcome the rejections under 35 U.S.C. §101. Support for the newly added limitations that recite that computer program instructions are actually executed can be found in *at least* paragraphs [0014], [0019], [0021], and [0025] - [0027]. Support the newly added limitations that that recite that the databases are stored in "memory devices" can be found in paragraphs [0027] and [0028].

Pending claim rejections under 35 U.S.C. §102 and amendments in response thereto

Claims 1-8 and 10-28 were also rejected under 35 U.S.C. §102(b) as

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being anticipated by U.S. patent number 5,794,172 to Matheson.

The applicant contends that the rejections under §102 were improper as a matter of law for reasons that are set forth below. Notwithstanding the impropriety of the rejections, the claims have been amended to further distinguish the applicant's claims from *Matheson* by reciting that the claimed method presents a visual presentation of what a person would see from a locomotive as if the locomotive were moving down an actual section of track. The simulation includes the display of "track events" as well as terrain that surrounds the train and track events.

Support for the claim amendments can be found in paragraphs [00012] through [00014], [00017] through [00019], [00021] through [00037], et al. No new matter has been added.

The independent claims' rejections were improper under controlling case law

Controlling Federal Circuit case law holds that in order to reject a claim under any section of 35 U.S.C. §102, each and every claim limitation must be found expressly or inherently in a single reference. MPEP §706.02 also states that in order to show "anticipation" under 35 U.S.C. §102, a single reference must teach every aspect of the claimed invention either explicitly or impliedly. A claim rejection made under 35 U.S.C. §102 is therefore invalid if there is even a single limitation of a pending that is not found in the reference relied upon by an examiner to reject a claim under §102. In order for the rejection of claims 1-8 and 10-28 to be proper, each and every limitation of each and every claim must be found somewhere in *Matheson*.

Paraphrased, the pending claims are directed to a method of displaying on a display device, a simulation of a train traveling over an actual section of track. Unlike prior art simulators, like Flight Simulator®, which display only a limited number of simulations using only a limited number of pre-programmed and pre-stored scenarios, the pending claims recite a train simulator that can present on a display device, images that simulate what a person would see

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from an actual train locomotive traveling along an *actual* track route. The simulation also includes the visual display of track event simulations making the train simulations more life-like, realistic and valuable to an engineer-in-training because they are simulations of actual track and actual track events. The display also includes the simulation and display of climate and geographic conditions around where an actual track event is located on an actual section of track.

The simulation of an actual train route uses an actual starting point and an actual ending point. Train track that might exist between the starting and ending points is simulated by the computer reading simulation library files for simulations of track between the starting and ending points.

The amended claims recite that the simulation provides on a display device, a simulation of what a person in a locomotive would see as the locomotive moves along an actual section of track. Paragraphs [0014] and [0015] clearly define the simulation recited in the claims as including the presentation of series of computer-generated images, which render or provide a three-dimensional model of the experience of operating a train, somewhat like the simulated 3-D experience of a program like Flight Simulator[®]. Unlike Flight Simulator[®] and other similar programs, however, all of which use pre-packaged or "canned" scenarios, the claimed method uses real geographic data as well as real climate and geographical data in the simulation process in order to provide a far more life-like simulation than would ever be possible using only a limited number of canned scenarios, as those used in game programs.

The rejections of claims 1-8 and 10-28 were improper as a matter of law for reasons set forth below.

Matheson does not disclose the display of simulated track, track events or terrain required by claim 1. It discloses only the display of commands to an engineer.

Referring to the rejection of claim 1 and to *Matheson*, the Examiner cited column 27, lines 46-56 of *Matheson* as disclosing the claim 1 step of "specifying

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to [a] computer, a 'track event' along an actual track route."

Well-established and controlling Federal Circuit case law holds that pending claim limitations are to be construed as broadly as possible but consistent with definitions given to them by an applicant within a specification. The term, "track event" is well-defined in paragraph [00012] of the specification. Several examples of a "track event" are also given. Since "track event" is well-defined, the Examiner should construe "track event" as it was defined by the applicant in the specification text.

The passage of *Matheson* cited by the Examiner as teaching the specification of a "track even" has absolutely nothing to do with a "track event" as the applicant's specification defines "track event." Column 27, lines 46-56 discuss components of a train, which are not the "track events" that pending claim 1 requires.

The Examiner cited column 31, lines 16-67 as disclosing the claim 1 limitation that requires "reading a track event database...to obtain a software model of [a] track event...." With regard to the track event database limitation of claim 1, lines 16-67 of column 31 do not disclose anything that is even similar to the track event database recited in claim 1.

With regard to the claim 1 limitation that requires the presentation of a *simulation* of a "track event," the Examiner cited column 31, lines 66-67 of *Matheson* as ostensibly teaching the limitation of the pending claims that requires the simulation of a track event on a display device.

Column 31, lines 66-67 of *Matheson* discloses only the display of commands to a train engineer, which the train engineer, can choose to execute or ignore. Lines 66-67 of column 31 of *Matheson* do not show or suggest the presentation of a simulation of a track or track event on a display device. Stated another way, the display of commands that can be chosen by an engineer, is not displaying visual images that replicate train track, track events or terrain around an actual track event.

The pending claims recite the presentation of a simulation of "track

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events" on a display device, which includes the presentation of a visual display of what a person would see from the window of a locomotive if it were moving along a section of an actual track. Put another way, nothing in *Matheson* shows or suggests a method or apparatus by which the *experience* of operating a train on an actual route is presented on a display device.

None of the limitations of claim 1 as it was originally filed can be found in *Matheson*. Notwithstanding the impropriety of the rejections, the applicant has amended the independent claims to more explicitly recite that the claimed methods provide a visual simulation of track events, which are defined in the specification in at least paragraphs [0012] and [0052]. The visual display of simulation of "track events" therefore necessarily excludes the display of maps, as many commercially available navigation aids. Moreover, the claims recite that the visual simulation is presented on a visual display device.

The Examiner cannot legitimately contend that the display of commands to a train engineer on a display device, as *Matheson* teaches in column 31, lines 66-67, anticipates, i.e., is the same as the display of graphic images of "track events" recited in the amended claims. The Examiner also cannot legitimately contend that specifying components of a train, satisfies claim limitations that require specifying track and/or terrain. Nor can the Examiner legitimately contend that a discussion of train signals satisfies a claim limitation that requires a track event database from which models of different track events can be obtained.

If the Examiner contends that the "visual display" of "track events" as the amended claims require is the same as the display of "commands" displayed to a train engineer as taught by *Matheson*, the applicant asks the Examiner to explain how graphical images of straight track, curved track, train signals, signs, bridges, crossings, tunnels, etc., are executable by a train engineer as *Matheson* requires in column 32, lines 1-2.

The arguments set forth above apply with equal force to the rejections of the other independent claims. They also apply to the rejections of the

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dependent claims as well.

Matheson does not disclose the claim 2 step of specifying the location of a track event.

Referring to claim 2, as originally filed, it required the specification of a "track event" location along an actual track route. As set forth above, controlling Federal Circuit case law holds that pending claim limitations are to be construed as broadly as possible but consistent with the definitions given to them within a specification. As also set forth above, "track event" is well-defined in paragraph [00012] of the specification and several examples of a "track event" are also given.

Since *Matheson* does not disclose "track events" as defined by the applicant, claim 2 should have been allowed. Claim 2 has nevertheless been amended such that it now requires the track event location be specified by its latitude and longitude.

In the office action, the Examiner cited the Abstract of *Matheson*, FIGS. 2-11, column 31, lines 32-65, column 27, lines 45-67 and column 28, lines 10-24 as anticipating claim 2. One or more of those passages must therefore disclose each and every limitation of claim 2.

A review of the passages cited by the Examiner shows that none of them disclose "specifying a 'track event' along an actual train route" as original claim 2 required. As for amended claim 2, which requires the location to be specified by latitude and longitude, the word "latitude" appears in *Matheson* only once, but it is not used to designate a location. The word "longitude" does not appear anywhere in *Matheson*. The rejection of claim 2 as it was originally filed was improper. Amended claim 2 is now further distinguished from *Matheson*.

Matheson does not disclose the claim 3 steps related to terrain simulation.

Dependent claim 3 depends from claim 2. Claim 3 requires the computer to read a "terrain database" to obtain information about the terrain

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surrounding a track event and by which that terrain can be simulated by the computer. Claim 3 therefore inherently requires the specification of a track event location as recited in claim 2, and, a terrain database from which terrain information can be obtained.

In rejecting claim 3, the Examiner cited the Abstract of *Matheson*, FIGS. 2-11, column 31, lines 32-65; column 27, lines 45-67 and column 28, lines 10-24. Superficially, the rejection of claim 3 seems well founded by virtue of the fact that the Examiner cited multiple sections of *Matheson*, however, a review of those sections cited by the Examiner reveals that none of them disclose the limitations recited in claim 3.

Nothing in the Abstract of *Matheson* pertains to a "terrain database" that claim 3 recites and which includes information about the terrain surrounding a "track event."

None of FIGS. 2-11 disclose a "terrain database."

In *Matheson*, lines 32-35 of column 31 mention rail topology, however, rail topology is not terrain, which surrounds the rail nor does the mere mention of rail topology disclose a database of terrain around the track as claim 3 requires. In fact, as the term "rail topology" is used in context, it has nothing to do with topology as the term is used in the pending claims. Stated another way, nothing in column 31, lines 32-35 anticipates claim 3 as the Examiner contends.

Lines 35-65 of column 31 of *Matheson* discuss train scheduling and train movement and train schedule conflicts, however, train scheduling, train movements and train schedule conflicts are not related to track events, terrain nor do they disclose a terrain database as claim 3 requires. Stated another way, nothing in column 31, lines 35-65 anticipates claim 3 as the Examiner contends.

Lines 45-67 of column 27 discuss train movements, train schedule, train cars and capacity, etc. Nothing in lines 45-67 of column 27 relate to the terrain surrounding an actual section of an actual track as claim 3 requires. Stated

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another way, nothing in column 27, lines 45-67 anticipates claim 3 as the Examiner contends.

As for *Matheson's* lines 10-24 of column 28, those lines also discuss train scheduling. Nothing in lines 10-24 of column 28 anticipates claim 3 as the Examiner contends. The rejection of claim 3 was improper as a matter of law.

Matheson does not disclose the claim 4 step of storing software models in a SIM file.

Dependent claim 4 recites the step of storing a software model of a "track event" in simulation file." In the office action, the Examiner cited the *Matheson* Abstract, *Matheson's* FIGS. 2-11, column 31, lines 32-65; column 27, lines 45-67 and column 28, lines 10-24 as ostensibly anticipating claim 4, which were the same passages that were cited by the Examiner as disclosing the limitations of claim 3.

As set forth above, *Matheson* does not disclose "track events." More importantly and with specific regard to claim 4, the word "file" does not even appear in the *Matheson* reference nor does "simulation file" or any equivalent thereof appear anywhere in *Matheson*. As with the rejections of claims 1, 2 and 3, the rejection of claim 4 was also improper.

Matheson does not disclose the claim 5 step of reading a terrain database for terrain data surrounding a track event.

Dependent claim 5 recites the steps of reading a surface coverage database to obtain information about surface coverage around a track event. The claim also requires that the computer of claim 1 generate a simulation of the actual surface coverage that would surround a track event.

The Examiner cited *Matheson's* Abstract, FIGS. 2-11, column 31, lines 32-65; column 27, lines 45-67 and column 28, lines 10-24 as disclosing the limitations of claim 5, which were the same *Matheson* passages that were cited as disclosing the limitations of claim 3 and the limitations of claim 4.

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As set forth above, *Matheson* does not disclose track events. None of the passages or figures of *Matheson* cited by the Examiner disclose or even suggest a database that stores information about the terrain surrounding track events. The rejection of claim 5 was also improper.

Matheson does not disclose any of the limitations of claim 6.

Claim 6 recites that the terrain database of claim 3 is a U.S. Geological Survey database.

Dependent claim 6 depends from claim 3. Claim 3 depends from claim 2. Claim 2 depends from claim 2.

The applicant admits that the U.S. Geological Survey provides terrain databases, however, the use of such a database in connection with a train simulator as recited in claim 1, which includes the location of a specific track event as required by claim 2, to provide a simulation of terrain around the track event as required by claim 3, is not admitted prior art and is certainly not disclosed in *Matheson* as the Examiner contends in the office action.

Matheson does not disclose any of the pending claim limitations.

It should be apparent to the Commissioner from the foregoing discussion of claims 1-6 that the Examiner's claim rejections were improper under well-established and controlling case law. Each and every claim limitation must be disclosed explicitly or inherently in *Matheson* and none of the passages that were repeatedly cited by the Examiner to justify rejecting various different claims disclose the pending claims.

Despite the impropriety of those rejections, the amendments to the independent claims set forth above further distinguish the pending claims from *Matheson*. If the Examiner contends that the amended claims are anticipated by *Matheson*, the applicant asks the Examiner to carefully review *Matheson* again and to identify by column and line number where each and every limitation of each and every claim can actually be found in the reference.


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The preamble of 35 U.S.C. §102, clearly states that an applicant is entitled to a patent if an applicant's claims are not anticipated under one or more sections of §102. This applicant is therefore entitled to a patent on the subject matter recited in pending claims 1-8 and 10-28. Reconsideration of the amended claims is therefore respectfully requested.

Respectfully submitted,

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Joseph F. Krause, Reg. No. 32,578
Ladas & Parry
224 South Michigan Avenue
Chicago, Illinois 60604
(312) 427-1300